Placental growth in mink

elucidated by mitosis, apoptosis and turnover rate through out gestation

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[P08.01].
ORGANOGENESIS OF THE CARDIO-RESPIRATORY SYSTEM OF BOVINE EMBRYOS MANIPULATED IN LABORATORY

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Morphogenic changes of cardio-respiratory system of cattle from *in vitro* fertilization and nuclear transfer are the main factors responsible for high incidence of embryo, fetal and postnatal mortality. The study of development of heart and lung was made using techniques of light microscopy. In the embryos derived from *in vitro* fertilization at 28 days of gestation was found the laryngotracheal tube and its septation through the fold trachea-oesophageal. In this same period, the embryos showed pericardial cavity, atrium divided into right and left portions, cone heart, venous sinus, myocardium and epicardium layer. Was observed sprouting in the right lateral portion of the trachea, cranial to its bifurcation in embryos with 36 days of gestational age. At 44 days of gestation the lung buds of the embryos showed the main bronchi originated of segmental bronchi. The mesenchyma of support in differentiation contained blood vessels dispersed, unlike embryos from nuclear transfer. These embryos at 68 days of gestation showed lung in pseudoglandular phase containing bronchioles buds and absence of blood vessels. At 70 days of gestation, the heart of the fetus showed significantly large ventricle, small lobby and undeveloped lung. The placenta is considered a vital organ of pregnancy. Therefore a flaw in the formation and development process can cause serious changes in organogenesis of the embryo and growth of the fetus until birth.
Keywords: cardio-respiratory system, bovine embryos, lung buds, heart

[P08.02].
LOOKING FOR THE VITELLINE PLACENTATION IN EARLY BOVINES EMBRYOS

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Yolk sac is an important organ to embryonic circulation and metabolic process mainly during the transition of chorionvitteline placentation process to chorionallantois one. About 25% to 40% of embryo lost occurs during fertilization process until implantation. The yolk sac is the mainly source of nutrition before true placenta will completely formed and your importance are related to hematopoiesis. The aim of this work is describes the primitive gut transitional area with yolk sac connection and maintain importance to the embryo until placental formation. Were collected 59 embryos during 10 to 50 days of pregnancy and were grouped by Crown-rump measure and external characteristics, fixed, and processed by procedures for embedding in paraffin. Sections were stained by HE. The embryo yolk sac was observed with active cells between it connection with primitive gut at anterior portion. Gut cells presented at begin of differentiation of epithelium columnar cells and endoderm follow down by undifferentiated layer of mesenchymal cells from the mesoderm. Gross aspect of this fetal membrane is centrally compact with two free elongated tips at 10 to 20 days of pregnancy and became decreases it size up to 40 days after fecundation. The yolk sac was formed by blood vessels island surrounding to endodermic cells and mesenchyme. Also was found nucleated blood cells (hemangioblast) from fetal origin. Mesenchymal layer was thin with elongated cell characterized by proteoglycan synthesis presented into cell matrix. At transitional strait channel between yolk sac and primitive gut with delicate roundest cells and into the lumen was found hemangioblast follow in fetus way direction and also coming into the mesenchyme. Although this last tissue type present hemangioblast into small capillary net. So, how is the real function of yolk sac and the vitelline nutrition marked the first environment adversity of the embryo life?
Keywords: development embryonary, yolk sac, vitelline placentation

[P08.03].
INITIAL DEVELOPMENT OF BOVINE PLACENTATION (*BOS INDICUS*) FROM THE POINT OF VIEW OF THE ALLANTOIS AND AMNION

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The aim of this study was to perform a morphological characterization of the initial bovine placental development, from 20 and 70 days post-insemination (p.i), with emphasis on the differentiation of the allantois and amnion. After collection, the conceptuses were dissected, macroscopically measured and photographically documented. The extraembryonic membranes were cut into fragments measuring 5 cm^2, and afterwards fixed in 4% paraformoldehyde for analysis by light microscopy, and 2.5% glutaraldehyde for use in scanning and transmission electron microscopy. The extraembryonic and fetal membranes presented variable degrees of development throughout the periods analyzed. The macroscopic appearance of vascularization of the allantois, its attempt to merge with the chorium, and the effective appearance of the first cotyledons in development were events observed from 30 to 40 days of pregnancy. The measurements of the amnion increased gradually as gestation developed. The allantoic epithelia presented cellular dimorphism from 20 to 25 days of pregnancy, but was shown to be immature from 60 to 70 days of pregnancy.
Financial support: FAPESP, CAPES, CNPq, FUNDUNESP
Keywords: Placenta, Allantois, Amnio, Bovine

[P08.04].
PLACENTAL GROWTH IN MINK: ELUCIDATED BY MITOSIS, APOPTOSIS AND TURNOVER RATE THROUGH OUT GESTATION

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Objective: The development of placenta, growth and angiogenesis is a prerequest for successful gestation. We here demonstrate the spatio- and temporal localization of the mitotic activity, caspase activity and endothelial turnover rate in a small carnivore, the mink, having an incomplete zonary, villous, endothelio-chorial placenta and delayed implantation.
Methods: Gestational age was estimated by uterine dilations (ampullae) and the fetal crown/rump (C/R) length (term 7cm). By immunohistochemical the activity of Ki-67 and Caspase-3 activity (18 mink) and 11 mink, injected with bromodeoxyuridin (Br-dUrd) 24-168 hrs before eutansia, was studied.
Results: Ki-67 activity at non pregnant was only seen in the stroma. At invasion the endometrium was very active also in glandular epithelium being lower in the luminal epithelium. Trophoblast cells were very active and especially during primary invasion, where the apposing maternal tissue except, vascular endothelium become non-reactive, this invasion pattern was seen up to 50-60 mm here close to the glandular part. The activity in glandular epithelium remained almost to late stage. The maternal endothelium was active to about late mid gestation and then declined rapidly showing only few mitotic cells at 60 mm, however the mitotic activity was dominated by trophoblast and fetal vasculature declining later than the activity in the maternal endothelium Caspase activity was high in tissues apposed to invasion.
Conclusion: 1) early mink placentation is characterized by high mitotic activity in the invasive trophoblast and uterine glands; 2) growth is high to late mid gestation mainly at the fetal placental side 3) maternal endothelial cell turnover rate at mid gestation is 5-7 days.
Keywords: Mink, mustelidae, placental growth pattern, Mitosis, Apoptosis